

# Colonial Waterbirds – nesting season



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**N.C. Wildlife Resources Commission**  
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# Cape Hatteras Workshop

- Provide panel with information on status of colonial waterbirds, summarize independent stressors affecting colonial waterbirds, discuss questions & issues
- ... relevant research and monitoring activities at the Seashore

# Workshop Objectives

- Review biology of colonial waterbirds, specifically those species nesting within Cape Hatteras National Seashore
  - Laughing Gull, Least Tern, Black Skimmer, Common Tern, Forster's Tern
- Breeding biology, population dynamics, habitat needs, monitoring and research needs

# Background

## Colonial Waterbird Surveys in NC

- Coast-wide surveys initiated by Dr. James Parnell, UNC-W in 1977
- 12 complete surveys: 1977, 1983, 1988, 1993, 1995, 1997, 1999, 2001, 2004, 2007, 2011, 2014
- Next survey, May-June 2017
- Data are used to track population trends; locate important nesting areas; guide management decisions & research; assist with permit reviews & decision-making
- NCWRC coordinates with NPS, USFWS, USMC, US Army COE, NC State Parks, NC NERR system, Audubon NC, private land owners

# Waterbird Project Goals

Maintain viable populations of native waterbirds & quality, dispersed habitats for them

- Population & habitat goals set by the NC Colonial Waterbird Committee (2000)
  - South Atlantic Migratory Bird Initiative (SAMBI) meetings
- Management
  - Protection of populations & habitats
  - Creating new habitats
  - Controlling predators
  - Educating the public & developing citizen scientists
- Research
- Collaborate with others in Atlantic Flyway

# Survey Methods



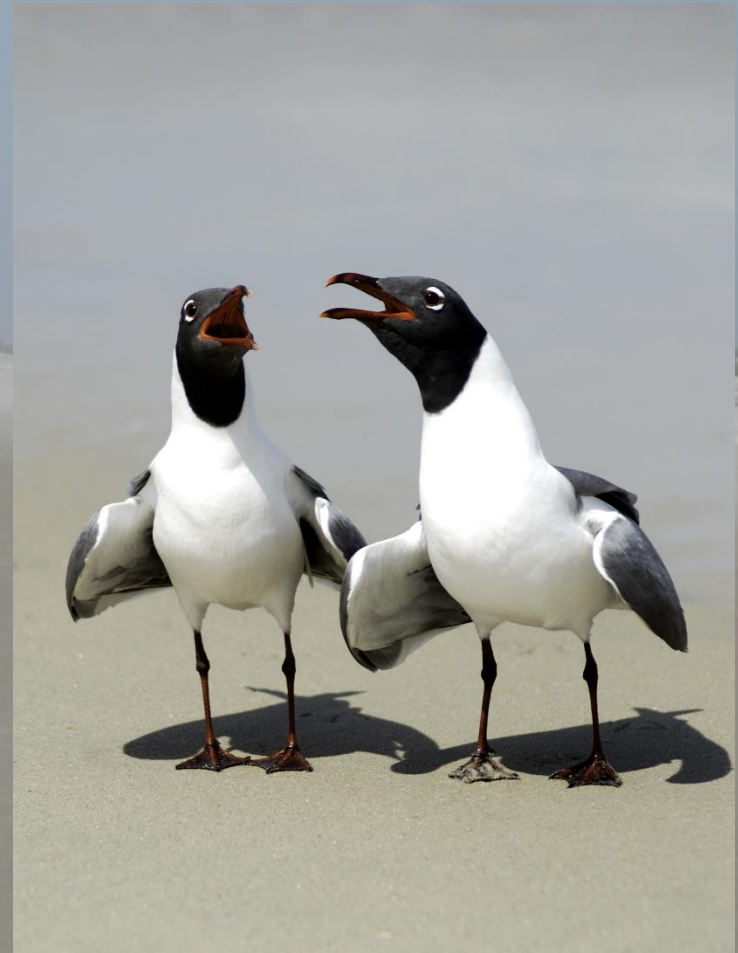
- May – June, visit known & potential nesting sites (barrier, estuarine, dredged-material islands); coastal swamps; flat roofs of buildings
- 1–15 observers depending on colony size

# Survey Methods

Count all active nests of each species along transects



# Survey Methods



# Survey Methods



# Breeding Biology



# Breeding Biology



# 2014 Colonial Waterbird Survey Results

- 67,939 nests of 20 species were counted at 111 sites
- Declining trend for 9 of the 20 species (45%)
- Greatest changes<sup>1</sup> detected were for the Cattle Egret (-79%), **Common Tern (-66%)**, Herring Gull (-38%), Tricolored Heron (-35%), and **Least Tern (+58%)** [12014 estimate relative to long-term ( $n = 12$ ) average]
- Species with greatest numbers of nests were the **Laughing Gull (24,037)**, Royal Tern (12,983), White Ibis (12,454), and Brown Pelican (4,400)

# Threatened Species and Species of Special Concern

Species (state listing)	2014 # Nests	Goal # Nests	2014 # Sites	Goal # Sites
Glossy Ibis (SC)	394	500	6	7
Snowy Egret (SC)	477	800	18	15
Tricolored Heron (SC)	837	1500	13	15
Little Blue Heron (SC)	748	1200	10	15
<b>Least Tern (SC)</b>	<b>3323</b>	<b>2000</b>	<b>66</b>	<b>25</b>
<b>Common Tern (SC)</b>	<b>474</b>	<b>2500</b>	<b>20</b>	<b>20</b>
<b>Black Skimmer (SC)</b>	<b>842</b>	<b>1000</b>	<b>20</b>	<b>15</b>
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# Least Tern

## State Listed - Special Concern

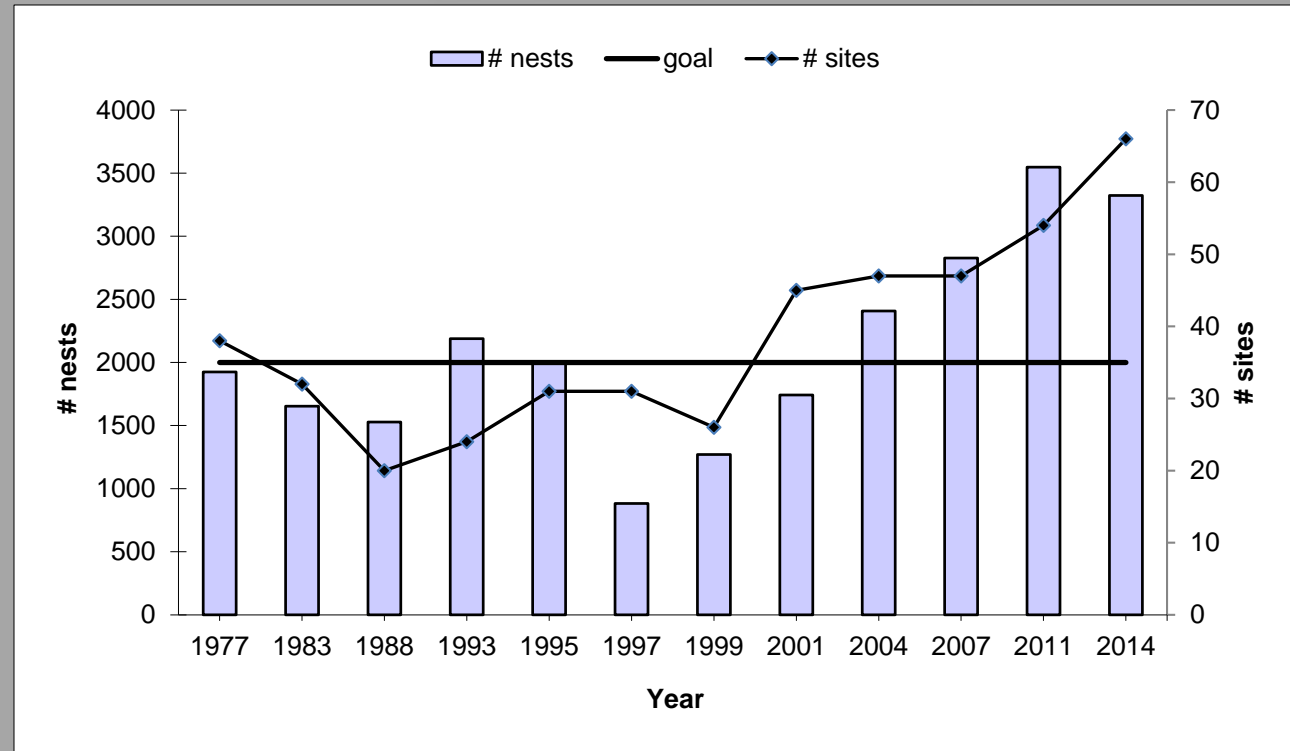
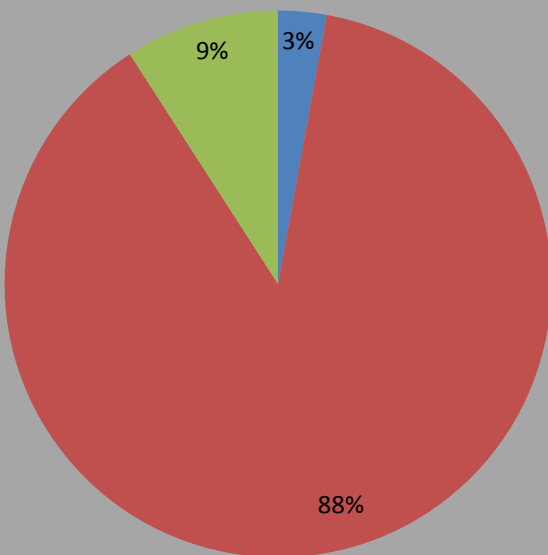
- First decrease observed since 1997
- Most (88%) of nests on natural sites
- Largest colonies found at inlets



Walker Golder

### LETE by Habitat Type

■ Dredge ■ Natural ■ Rooftop



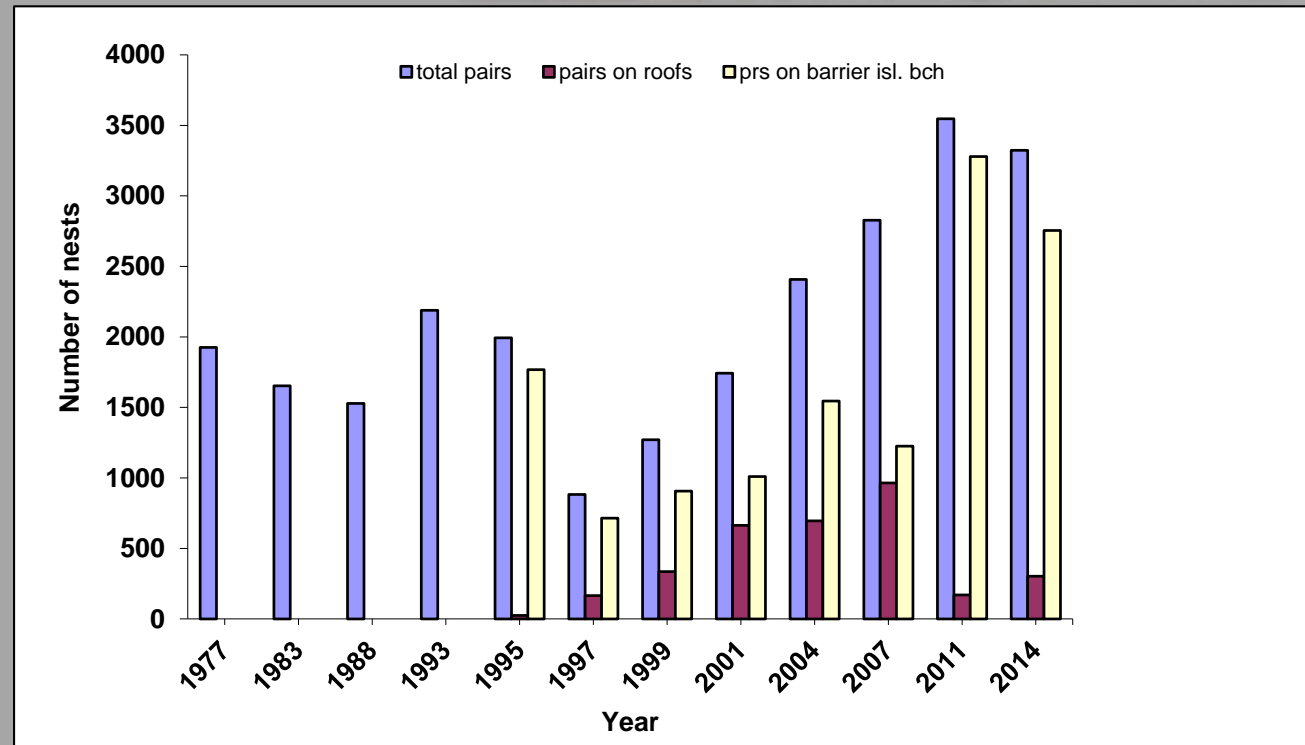
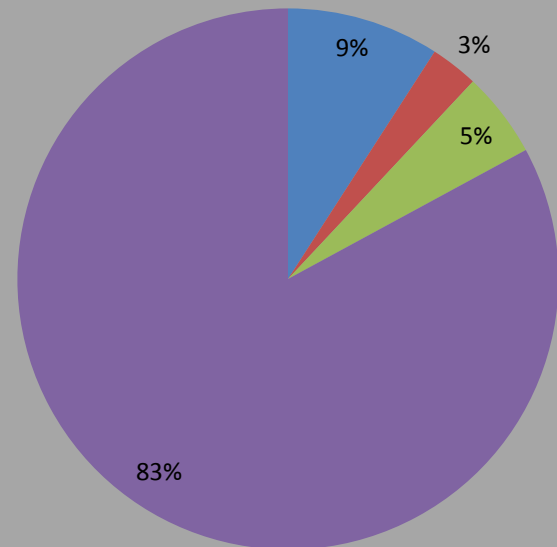
# Least Tern

***State Listed – Species of Special Concern***



## LETE by Habitat Type

■ Rooftop ■ Dredge ■ Natural ■ Beach



# Common Tern

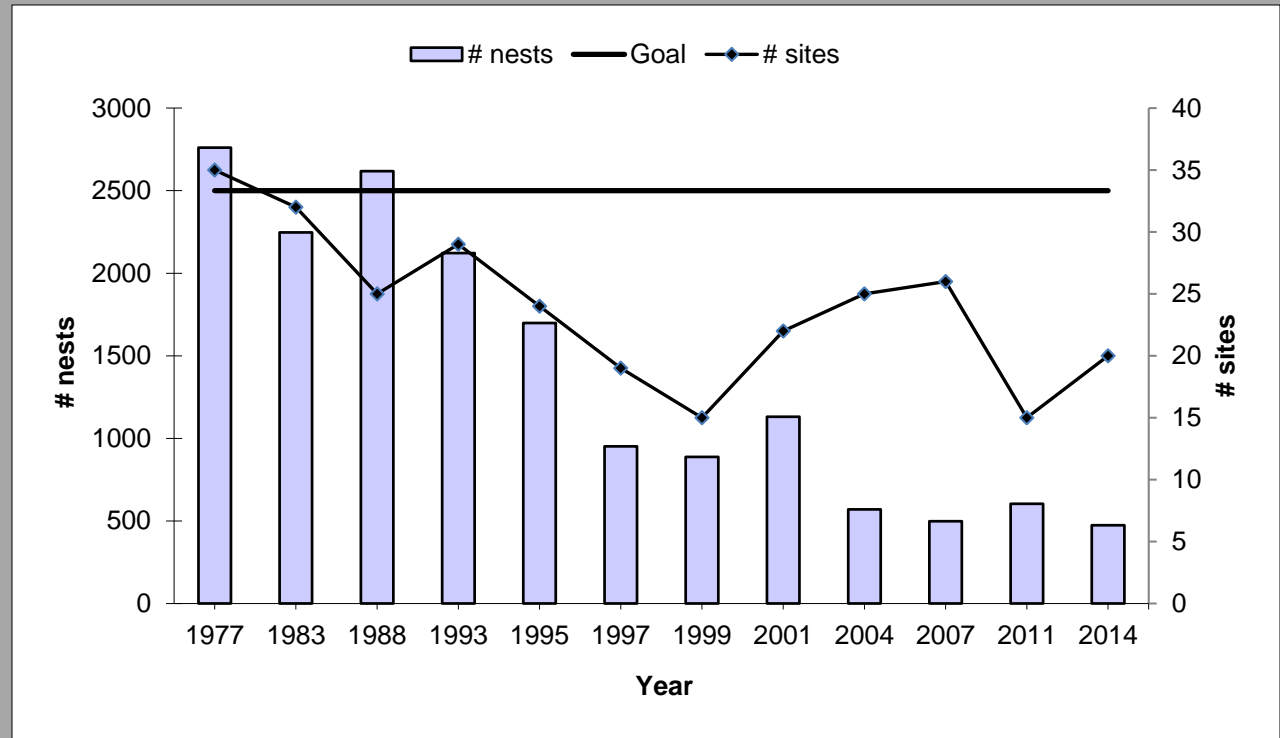
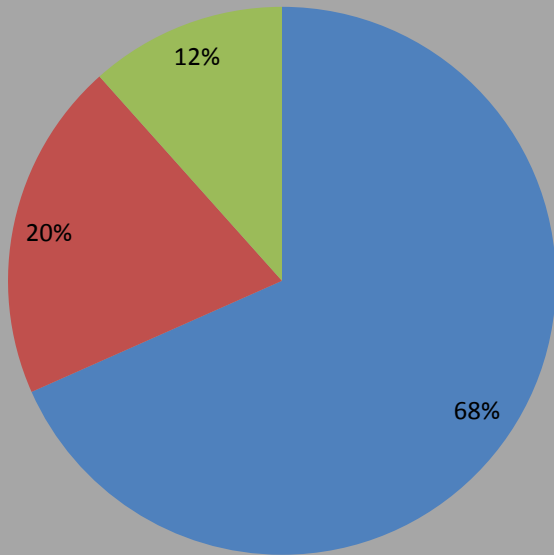
## State Listed - Special Concern

- Colonies at 20 sites
- Largest colonies on Big Foot, Wells, & Cora June Is.
- Most nests (68%) were on man-made sites



### COTE by Habitat Type

■ Dredged: ■ Natural ■ Beach



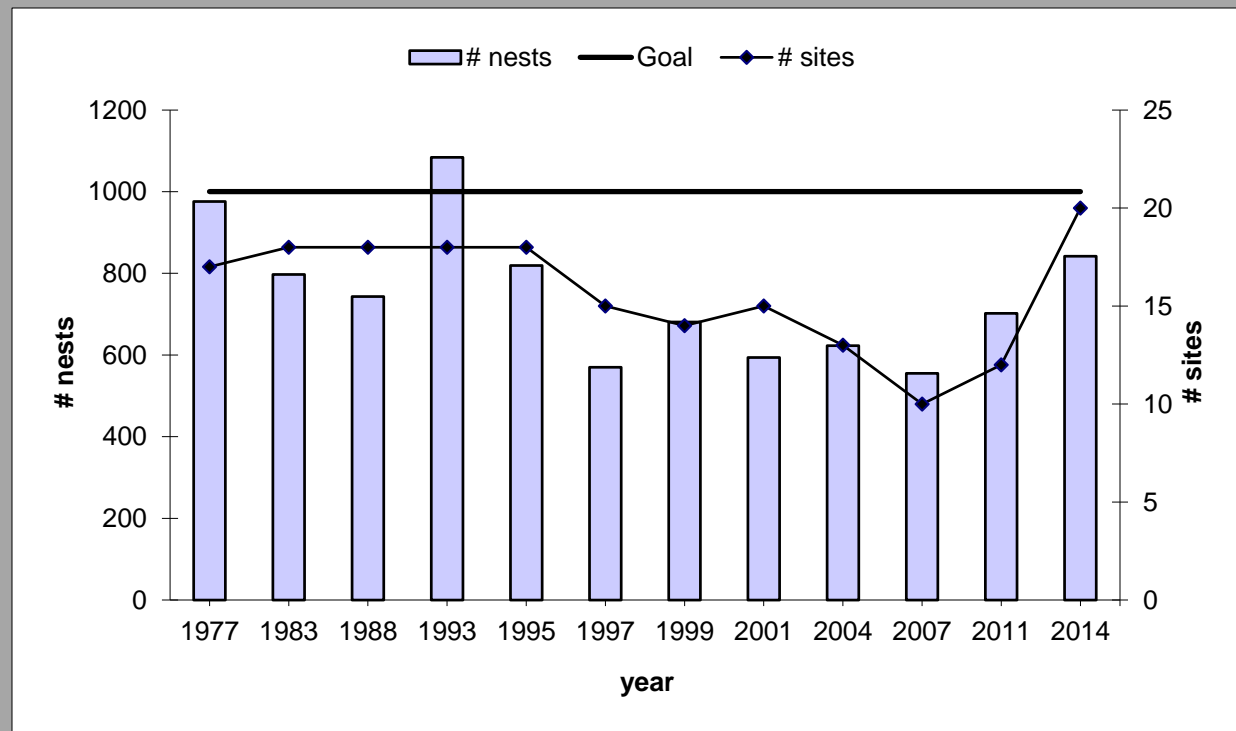
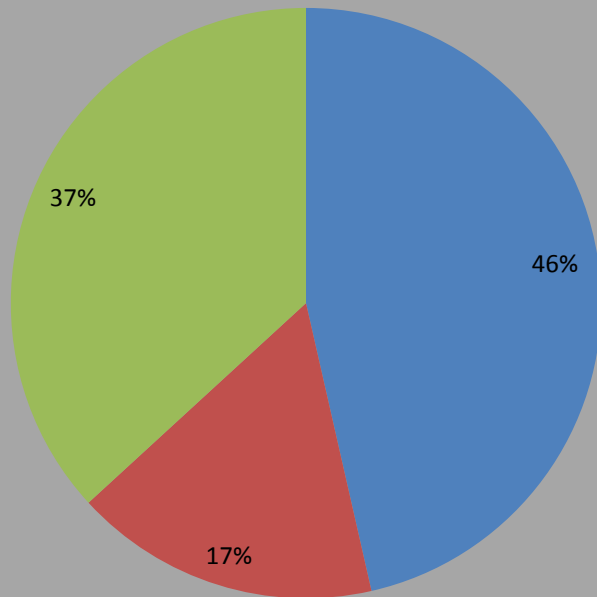
# ***Black Skimmer***

## ***State Listed – Species of Special Concern***

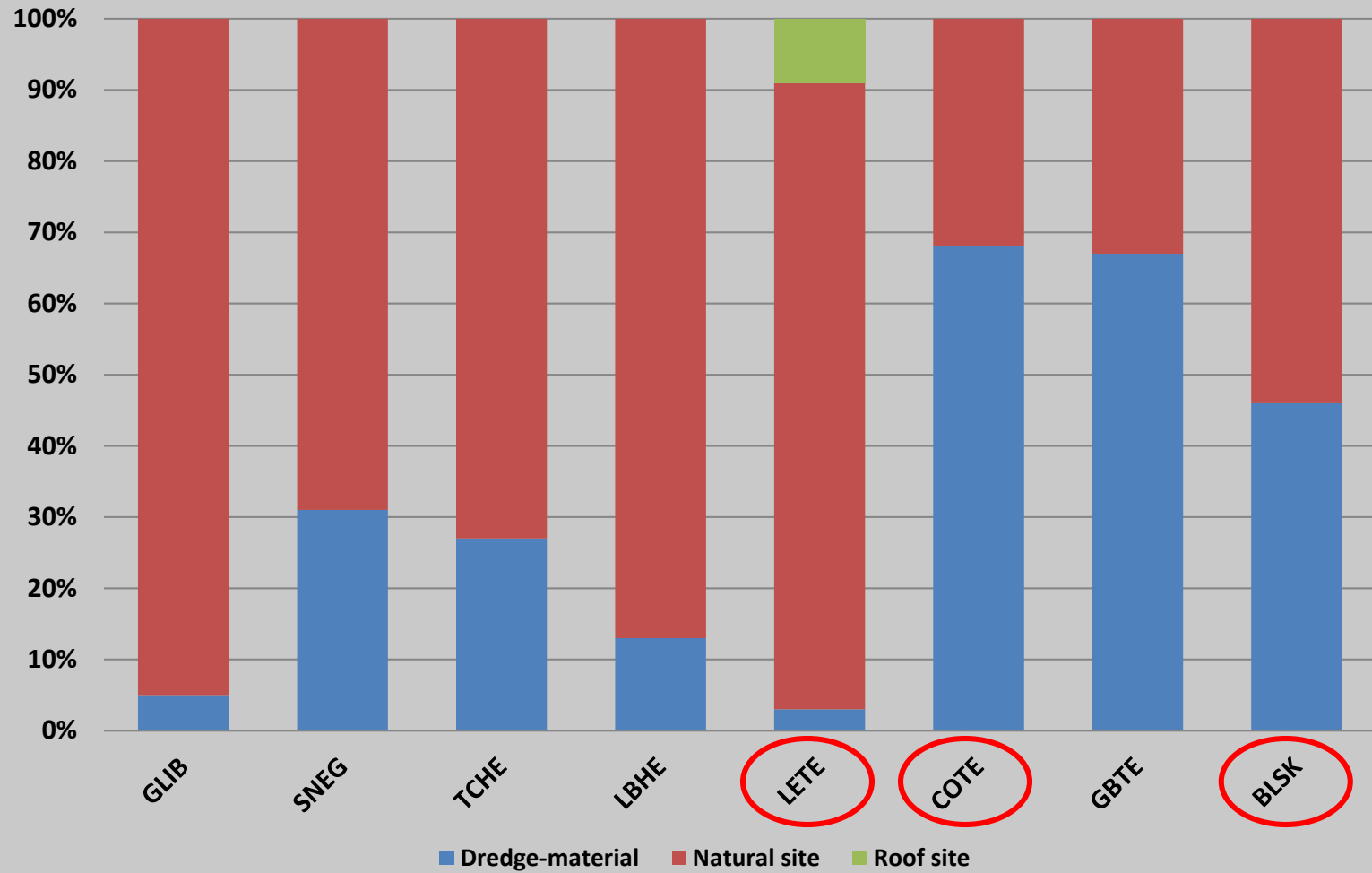


### **BLSK by Habitat Type**

■ Dredged: ■ Natural: ■ Beach



## Selection of Nesting Sites by Listed Species



# Success Stories of 2014

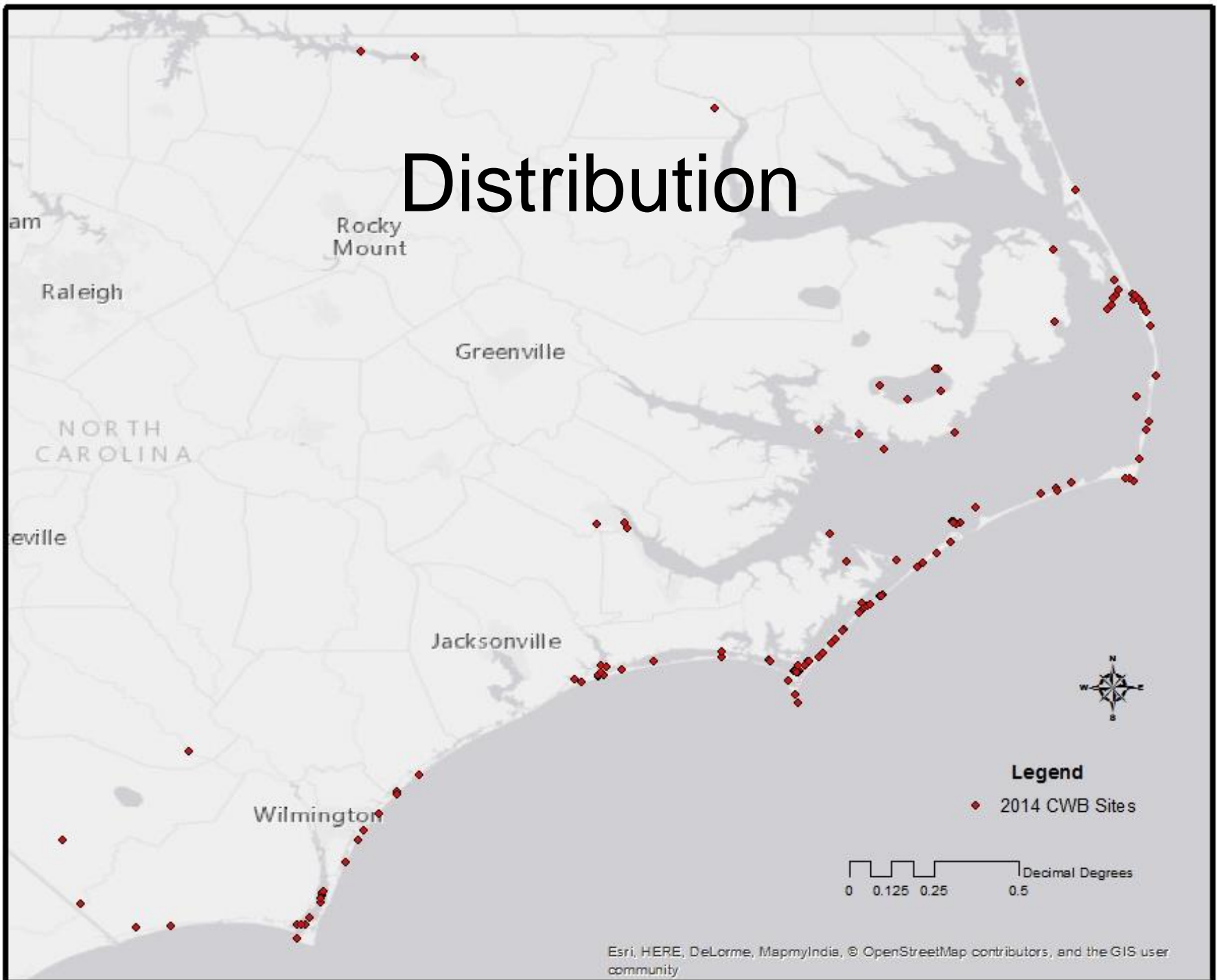
2014 Successful Species



# Terns & Skimmers

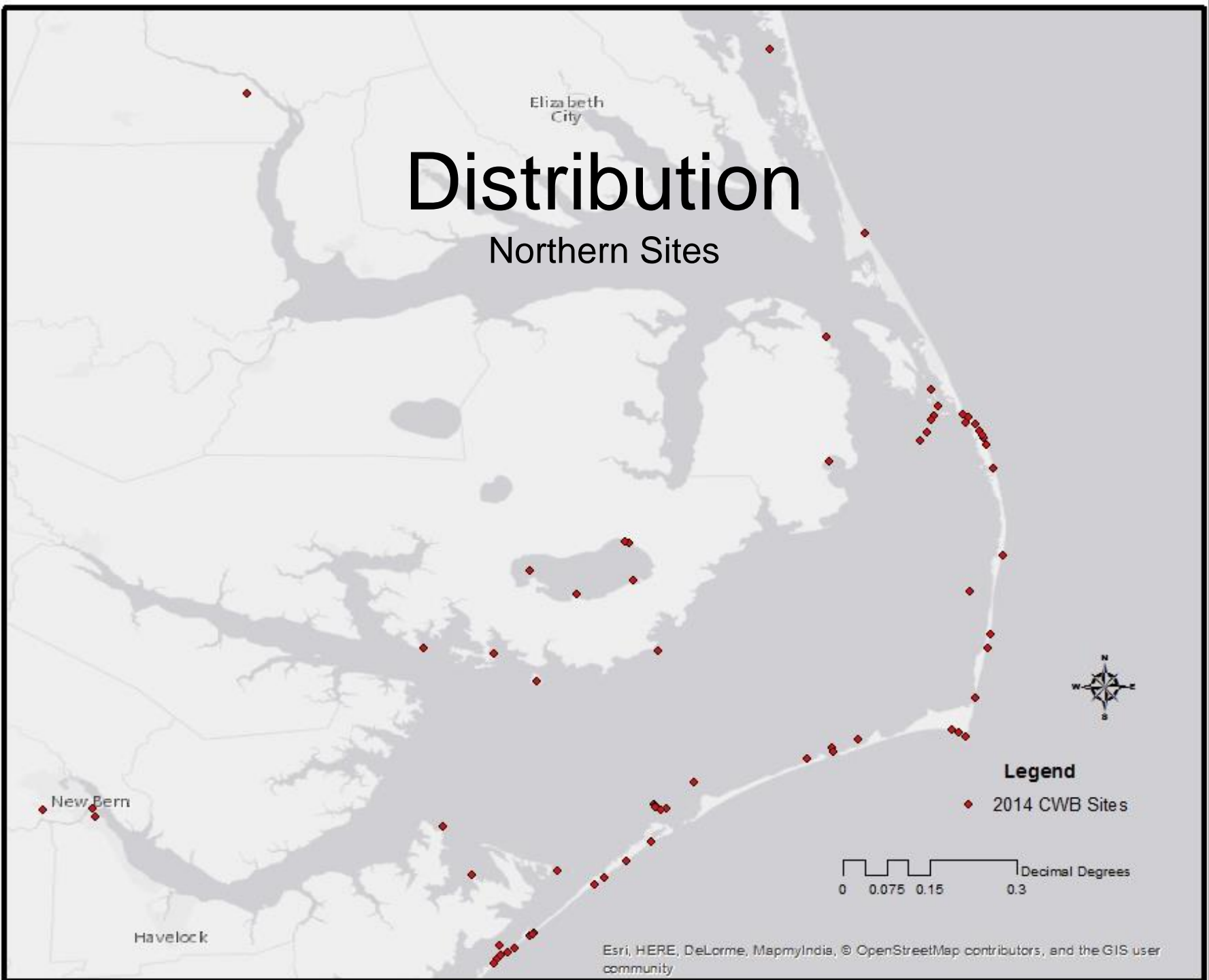
Species	2014 # nests	12-year average	Change since 2011 (#)	Change since 2011 (%)	# colonies	% change in colonies since 2011
<b>Common Tern</b>	474	1383	-130	-21.5	20	33.3
Gull-billed Tern	155	179	-28	-15.3	10	11.1
<b>Forster's Tern</b>	878	1019	-103	-10.5	22	57.1
<b>Least Tern</b>	3323	2107	-224	-6.7	66	18.2
Sandwich Tern	2904	2431	194	+7.2	5	0.0
Royal Tern	12,983	12498	1934	+17.5	5	-16.7
<b>Black Skimmer</b>	842	751	140	+19.9	20	66.7
Caspian Tern	15	19	14	+1400.0	1	0.0

# Distribution



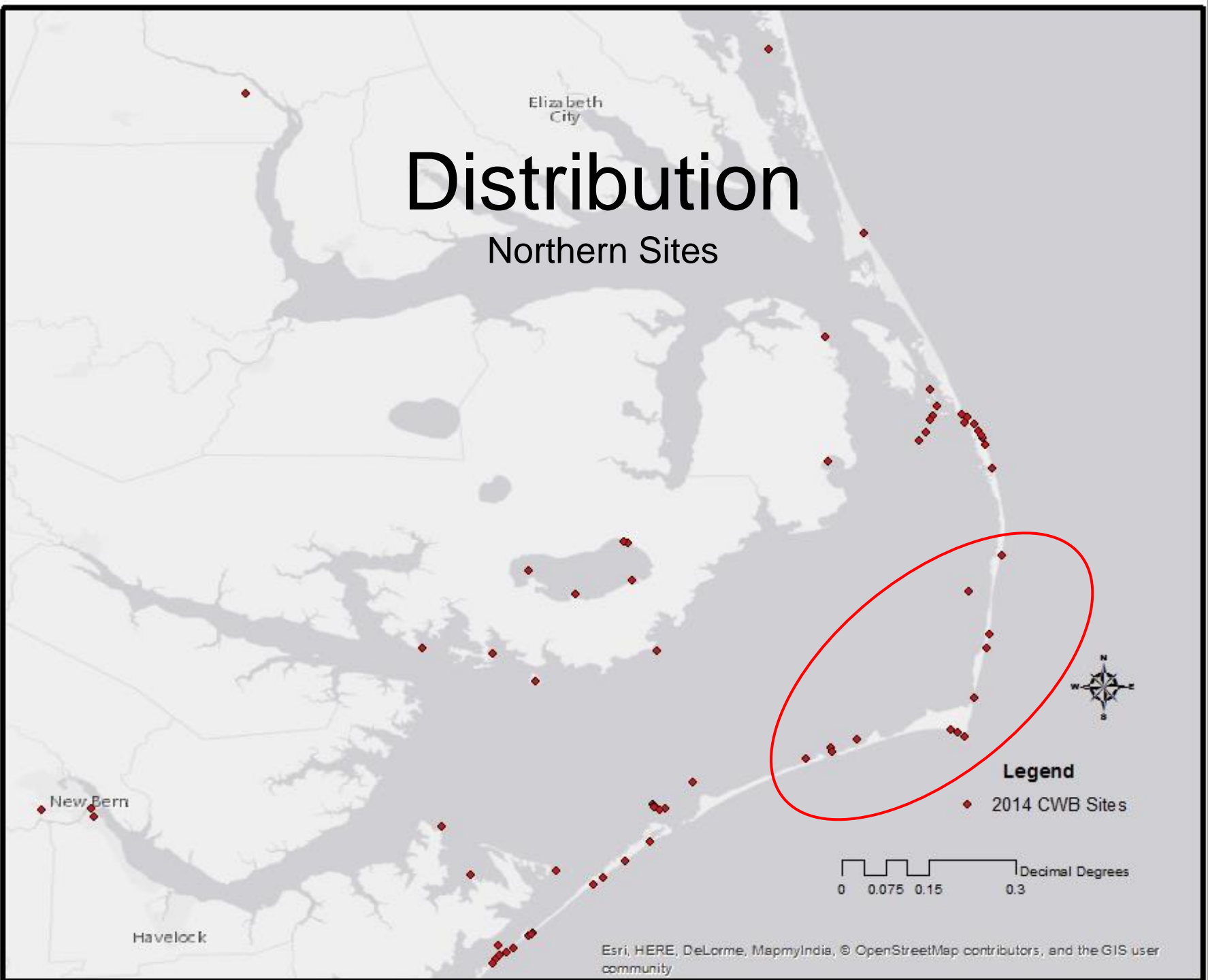
# Distribution

## Northern Sites



# Distribution

## Northern Sites



*Protected, natural habitats –  
where most birds nested*



# *Unprotected areas – what birds avoid*



# Threats



# Information Needs

- Distance at which birds express stress & alert behavior; at which birds flush;
- Estimates of productivity & fledgling success relative to stressors;
- Study of change in habitat availability -
  - Size of quality habitat;
  - Available habitat (relative to disturbance);
  - Predicted future habitat.
- Predation impacts on productivity & colony abandonment;
- Response of public to education, outreach, & engagement.



# Questions & Discussion

